THE MARINE RECORD.

DEVOTED TO COMMERCE, ENGINEERING AND SCIENCE.

ESTABLISHED 1878.

VOL. XV. CLEVELAND, OHIO, JANUARY 14, 1892. NO. 3.

Maritime Law.

COLLISION WITH VESSEL AT FIRE—GUST OF WIND—CLAIM OF INEVITABLE ACCIDENT.

U. S. District Court, Southern District of New York.

A steam elevator in attempting to moor alongside certain barges in the Hudson River, struck and sunk one. The elevator claimed that the collision was an inevitable accident, due to a sudden gust of wind. The evidence showed that the wind was strong, that the elevator left the less exposed side of the river to come somewhat with the wind to the more exposed side where barges lay, and that especial care in a wind is required at the place where she attempted to bring up. Held, that the evidence showed a lack of caution in the elevator in approaching her dock, that the collision was therefore not an inevitable accident and the elevator was liable for the damage.

NEGLIGENT TOWAGE—CONTACT BETWEEN TOW AND PIER—OLD AND WEAK BOAT—APPORTIONMENT.

U. S. District Court, Southern District of New York.

A boat is bound to be able to withstand the ordinary contacts of navigation, or, if she desires extra care in towage, her master is bound to give notice of her weak condition. Libelants canal boat was weak and unable to withstand ordinary contacts of navigation, and no notice thereof was given to claimants tug. The evidence indicates, however, that in taking libelants boat out of a slip she struck the pier so heavy a blow that she afterwards sank from the effects thereof. Held, that the damages should be divided.

District Court, D. Massachusetts. September 29, 1891.

COLLISION—STEAM AND SAIL—FOG HORNS.

As the steamer Parthian was proceeding northward 50 miles off Sandy Hook, in a thick fog, she heard prolonged blasts resembling those of a steam whistle on her port bow, and, supposing them to be made by a vessel under steam, slowed down to half speed, and gave two blasts on her whistle, as a signal that she would direct her course to port, and pass on the starboard side. Receiving two short blasts in return, she put her helm hard to starboard, and as she was falling off repeated her signal, which was answered by a single blast. She thereupon threw her wheel hard to port, and reversed her engines full speed astern, but shortly afterwards collided with a sailing vessel. The sounds made by the latter were produced by an instrument blown by steam from a boiler carried in the hold. Held, that the use of such an instrument, instead of the usual atmospheric horn, rendered the sailing vessel solely in fault.

Nelson, J.

This collision occurred on the 16th of July, 1890, at 8 o'clock in the morning, in a thick fog. The place of the collision was 55 miles S. E. by E. from Sandy Hook. The steamer Parthian, of the Boston and Philadelphia Line, was on one of her usual trips from Philadelphia to Boston. The schooner Florence was bound on a voyoge from Bangor to Philadelphia, with a cargo of ice. The wind was light from the northwest. As the Parthian was proceeding on her course to the northward, enveloped in the fog, the men in charge heard on the port bow prolonged blasts, repeated at frequent intervals and coming nearer, resembling blasts made by a steam whistle, which they took to be the fog-signals of a vessel under steam. The steamer was thereupon slowed down to half speed, and two short blasts were made with her whistle, as a signal that she would direct her course to port, and pass the approaching vessel on her starboard side. Receiving in reply two short blasts, and deeming this to be an acceptance of the proposal indicated by her signal, that the vessels should pass starboard to starboard, her wheel was put hard to starboard. As she was falling off to port under her starboard wheel her signal was repeated, and receiving back a single blast only, her wheel was thrown over hard to port, and her engines stopped and reversed full speed astern but before she could be stopped the schooner Florence appeared out of the fog crossing the Parthian's bows from starboard to port. Nothing more could be done to prevent a collision, and she struck the Florence on her port side just aft of her main rigging. The sounds which the men on the Parthian had mistaken for the fog signals of a steamer proved to have come from the Florence, and were made by a huge copper horn blown by steam supplied from a steam boiler on board. She had no atmospheric horn on board, but carried instead this instrument blown by steam, to be used for signaling in a fog. The evidence is clear that the sound produced by it closely resembled that of some varieties of whistles used on steam vessels, and was so similar as to be extremely likely to deceive and mislead those hearing it at a distance, especially in a fog. The men on the Parthian were completely deceived, and none of them, from master to passengers had the least suspicion that the sounds heard on the port bow were not the fog signal of a steamer.

There can be no doubt that the course pursued by the Parthian was the usual and proper one under the circumstances, if the Florence had been a vessel under steam instead of a sailing vessel. Nor can there be any doubt on these facts that the disaster happened solely through the fault of those in charge of the Florence in making fog signals by means of an instrument not sanctioned by the sailing rules. It was plainly her duty to give notice of her presence in the fog by a horn blown by atmospheric pressure, and not by blasts from an instrument closely resembling a steam whistle. Her horn was substantially a steam whistle, such as belongs to a vessel under steam, and which a vessel under sail has no right to sound in a fog. The men in charge of the Parthian were not to blame for maneuvers based upon the theory that the approaching vessel was a steamer, and as they fell into this error through those in charge of the Florence, their excuse is complete. In the cross libel of the owners of the Parthian against the Florence, an interlocutory decree is to be entered for the libelants, and the libel of the owners of the Florence against the Parthian is to be dismissed with costs. Ordered accordingly. Fed. Rep. Vol. 48 pp. 175.

LEGISLATION IN THE INTERESTS OF THE MERCANTILE MARINE TO COME BEFORE THE FIFTY-SECOND CONGRESS.

To enlarge the ship room and increase the comfort of immigrants. To extend the privileges of the transportation of dutiable merchandise without appraisement to the port of Sardusky, O.—For the establishment of a beacon light and fog signal on the Government breakwater recently constructed at Bridgeport, Conn.—To improve the navigation and afford ease and safety to the trade and commerce of the Mississippi River, and to prevent destructive floods, by building and repairing and extending the levees and dikes and other works, with an appropriation therefor.—To amend the act entitled "An act to incorporate the Maritime Canal Company of Nicaragua" approved February 20th, 1889.—To protect the wages of seamen. To amend section 4153 Revised Statutes, defining register tonnage, to provide for the supervision of vessel measurement, and to insure accuracy in the computation of tonnage.—To amend the law relative to the shipment, payment, and discharge of seamen.—To regulate the changing of the names of vessels.—To increase the safety of life and property on ships at sea by establishing rules for freeboard or load marks.—To amend an act entitled "An act to amend section 4178 Revised Statutes, in relation to the marking of vessels names at bow and stern, and also to provide for marking the draft" approved February 21st, 1891.—Exempting American coastwise sailing vessels piloted by their licensed masters or by a United States pilot from the obligation to pay State pilots for services not rendered. To increase the efficiency of the Engineer Corps of the Navy.—To amend section 3117 of the Revised Statutes of the United States, in relation to the coasting trade on the Great Lakes.

ADMIRALTY DOCKET.

The assignment of admiralty cases for January 1892, in the United States District Court, Northern district of Ohio, Eastern division, were called on Monday, the 4th. of January. Causes at issue were then assigned for trial. All cases not assigned at that time, were continued. In cases wherein parties are in default, judgments may be entered without regard to assignment.

1902. The Bradley Transportation Co., et al. vs. The Western Transit Co.; 1914. C. E. Benham, et al. vs. Tug Dreadnaught; 1920. Hugh Coyne vs. Steam Tug Dan Donnelly; 1921. John W. Averill vs. the Tug Cushing; 1926. George Roakes, vs. Schooner Emma C. Hutchinson et al.; 1941. The Bradley Transportation Co. et al. vs. Steam Tug John Gregory; 1949. P. H. Fleming et al. vs. Steam Tug Dan Connelly et al.; 1951. W. C. Runyan et al. vs. Au Sable Transportation Co.; 1960. Daniel Connelly vs. Steam Tug Helene; 1966. E. J. Cuyler, et al. vs. Steamer Cormorant and Schooner Kent; 1967. A. C. Chapman vs. John Corrigan and X. C. Scott; 1969. Homer B. Candler et al. vs. Certain Tons of Ice; 1970. L. P. Smith and J. A. Smith vs. Propeller Fred McBrier; 1991. H. D. Turney et al. vs. Steamer Wocoken; 1992. Louis B. Presley et al. vs. The Valley Railway Co; 1994. Edward Donaldson vs. Steam Tug Dudley; 1995. Robert Greenhalgh vs Steam Barge Alice Strong; 1996. John C. Brennan vs. Steam Yacht Tempest; 1998. Wyndham C. Jones vs. Steam Tug American Eagle; 2001. The United States vs. Steamer George Stauber; 2006. Edward Dahlke vs. Steam Tug Alva B.; 2008. Walter C. Runyon and Walter E. Mack vs. Chas. E. Benham and Joseph Doville.

ASSIGNMENTS IN THE ENGINEER CORPS.

The following changes in the stations and duties of officers of the Corps of Engineers U. S. A., are ordered; Major James F. Gregory, from Washington, D. C., to Milwaukee, Wis., and relieve Major Charles E. L. B. Davis of the duties under his charge. Major Davis will take station at Washington, D. C., and relieve Capt. Thomas Turtle of the duties lately under charge of Major Lewis C. Overman. Major Earnest H. Ruffner, now at Quincy, Ills., will turn over the duties under his charge temporarily to Major Alexander Mackensie, and proceed to Buffalo, N. Y., and relieve Major Amos Stickney, who will take station at Cincinnati, O., relieving Major Daniel W. Lockwood of the duties lately under the charge of Lieut. Col. William E. Merrill (S. O., Jan. 5, H. Q. A.)

THE MARINE RECORD ABROAD.

The following taken from *Fairplay*, London, seems to have been endorsed as having the right ring about it.—THE MARINE RECORD, of Cleveland, Ohio, speaks of Captain John Milbank—who had just paid the RECORD office a visit—as "one of the stormy petrels of London Lloyd's Salvage Association."

IT looks as if Lake Erie was to have a new canal reaching into Pennsylvania at least judging from the charges placed upon Senators and Representatives by their constituents, Senator Quay wants a canal from the Ohio River to Pittsburg. Mr. Griswold, of the Erie district has introduced a similar bill, for the survey of the route, Mr. Dalzell, of Alleghany, has one appropriating $40,000 for surveys, and authorizing the selection of the most feasible route through Ohio and Pennsylvania. Mr. Gillespie, of Pennsylvania, has also introduced a bill for a canal, making Conneaut, O., the northern terminus. He claims the advantage of a route twenty miles shorter. Yet even with all of these advantages and influences it is questionable if the fifty second Congress will authorize even the survey made.

CLEVELAND VESSEL OWNERS' ASSOCIATION.

ORGANIZED IN 1880.

(Membership 1890.)

One hundred and thirty-eight steamers, and One hundred and thirty-two sail and barge, } Aggregating 245,70[illegible] tons.

Maintains shipping offices at Cleveland, Ashtabula Harbor, Fairport and Toledo. Regulates wages, protects crews, and takes cognizance of all matters in the interest of the members and of the lake commerce generally.

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M. A. BRADLEY, - - - - - Vice President
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THE MARINE RECORD.—OFFICIAL PAPER.

NEWS AROUND THE LAKES.

CLEVELAND, O.

Attorney Samuel H. Crowl, has been admitted to practice as proctor in admiralty cases.

The Chase Machine Co. have just shipped a duplex condensing pump to Houghton, Mich., and two boiler feed pumps to Detroit.

H. D. Coffinberry, president of the Cleveland Ship Building Co., has re-turned to the city after a prolonged absence on an eastern tour.

L. P. & G. A. Smith have a large force of men at work enlarging and rebuilding the Cleveland dry dock, which is to be made considerably longer, and to accommodate a steamer of 360 feet keel.

Captain Babcock, keeper of the life saving station at Fairport, O., visited the city this week, the captain is one of the most experienced men in the service, having seen seventeen years of active work and he is still an energetic wiry man apparently good for as many more years.

Captain Alex McDougall, general manager of the American Steel Barge Co., passed through the city Monday en-route for New York, to attend the annual meeting of the directors of the company. Captain Thomas Wilson will leave Washington and be present at the meeting also.

A letter signed "Barnacle," in the *Plain Dealer* of the 14th. strikes the key note as to the location of this city for yachting purposes. The writer suggests that the down town business men, Adelbert College students, and others assist the C. Y. C. in bringing the port into prominence as a yachting center, "Barnacle" has evidently "been there," and knows whereof he speaks.

Conrad Christianson, assistant light keeper, shipped an assistant last week and signed articles with her for life. It is to be hoped that the lighthouse on the hill will send forth a cheerier ray than ever since the keeper has taken aboard the apostolic injunction, about it not being good for man to be alone—or woman either.

Captain N. Bartlett, the "good man at the wheel," is in port again at his former avocation and is keeping his luff in spite of all competition, the captain announces his intention of proceeding to Ashtabula April 1st, 1892, to establish a first-class meat market for the benefit of the Cleveland vessel men and one or two Detroit firms also for Captain James Ash, of Buffalo and James Davidson of Bay City.

It is learned here that Capt. Alex. Clarke, of the steamer Robert Mills, and grand president of the E. M. B. A., signed a charter for life with an estimable consort in Buffalo last Tuesday. Congratulations will be in order on the 21st. inst., when the captain will spend some days in this city at the annual convention of the order, whose ranks now contain about 720 of the most intelligent mariners on the Great Lakes. Much success to you Captain!

With the return of Captains Wilson, Bradley, and Corrigan, it is learned that the outlook for lake improvements is most promising. A number of Senators will cooperate in their efforts to bring about a due recognition of the aids to commerce made necessary by the deeper draft fo vessels. Col. Haynes will introduce a bill which the delegation framed before leaving, asking for increased aids to navigation. Naval Secretary Coffin and Capt. Mahan, of the Lighthouse Board, were also interviewed. Capt. McKay will stay at Washington for a few days and attend to the final results of the delegations visit.

The steam yacht Wadena, built for J. H. Wade Jr., by the Cleveland Shipbuilding Co., left Brooklyn last week for her trip across the Atlantic. An illustrated descriptive article of the handsome steam yacht built on the Great Lakes was published in the New York Herald of the 11th., and all sources speak in tne highest terms of her construction and equipment. She is now officered as follows: captain, J. C. Collamore, formerly of the steam yacht Cora; first mate, J. Crosby; second mate, Harry Hayman; chief engineer, J. B. Smith; first assistant engineer, W. H. Leavy; second assistant, William Kohl, Chief Engineer J. B. Smith is a lake engineer, and sailed last season in the Bradley employ.

The meeting of the Civil Engineers' Club Thursday evening was an entertaining one. After electing Mr. Charles W. Honkinson to active membership, Prof. J. N. Stockwell read a very interesting paper upon "On the position of the Center of All the Dry Land on the Earth's Surface." The paper was exhaustive, and after Prof. Stockwell had demonstrated his ability to thoroughly handle his subject, several members discussed the problem of the best means of solving the dry land center, Prof. Stockwell spoke upon the metric system, and the supposition that the great pyramids centered the dry land, but he had found by taking the present geography of the earth as a base, that the center was 1800 miles distant from the pyramids. All who attended were well pleased with the professor's lecture.

CHICAGO, ILLS.

Special to The Marine Record.

The Peshtigo Co's. barge Noquebay, is receiving new decks.

Captain Mallory, of the steamer Hadley, left here for his home on Saturday.

The Anchor Line Steamer Lehigh, went to the Santa-Fe elevator Friday to load 50,000 bushels of wheat on private terms.

At Miller Bros., shipyard the steamer Viking, is in dock for a new shoe, some repairs and calking; the schooner C. J. Magill, is in for a partial rebuild.

Finney & Channon, ship chandlery, supplied the steamer H. A. Tuttle with a 150 fathom 8½ inch line, before she took her departure for Milwaukee last Saturday.

The schooner Hattie Hutt, was sold by Higgie & Walsh, vessel agents, Chicago, for Louis Hutt, to O. Hanson, of Milwaukee, last week. Consideration $4,500 cash.

P. H. Fleming & Co., vessel agents Chicago, last week chartered the schooner John B. Merrill and steamer Germanic for flaxseed to Buffalo at 5¾ cents for storage and delivery.

The schooner Seaman, Capt. Duncan Buchanan left this port for Sheboygan, Wis., with hay, last Thursday. She was the latest sail vessel departure from this port for the past season.

Tobin & Hamlin machinists, are rebuilding the engine of the steamer Robert Holland, engineer George Wilson who was chief on the steamer Pasadena last season, is superintending the work and will be chief engineer on the Holland next season.

The tug T. T. Morford, Captain Charley Roach, of the Dunham Towing & Wrecking Co., left Chicago with the steamer H. A. Tuttle, Saturday evening at seven o'clock for Milwaukee. The Morford towed her to that port and arrived back here Sunday at mid-night.

James Mowatt, superintendent of the Chicago Dry Dock Co., left Chicago Tuesday night on a vacation for the benefit of his health. He will visit Lithia Springs, West Virginia, and Florida. We hope to see him restored to perfect health on his return.

Captain Nicholson, of the steamer Tom Adams, arrived here Tuesday to look after the steamer Farwell and barge Rutter. They will probably soon take on loads of grain. Shippers are offering 5 cents on grain for storage and freight, but agents and owners are holding out for 5½ cents.

Chicago statistics for 1891 makes the following showing: Customs duties collected, $5,983,589; vessels arrived, 8,956; cleared, 9,144; anthracite coal received by lake, 1,215,337 tons; shipments of wheat, 29,641,142 bushels; corn, 37,705,267 bushels; clearing house totals for year, $104,083,157.

Captain P. Minch, of Cleveland and Fred C. Starke, of the Milwaukee shipbuilding company of Milwaukee were in Chicago Saturday making arrangements for towing the steamer H. A. Tuttle to Milwaukee to be placed in dry dock for the purpose of undergoing repairs to the damage recently sustained by her from fire.

The small fore and aft schooner Cora, Captain L. Chadwick, which arrived here January 6th with laths from Menominee was towed up to the lumber market on the 12th by the tug Viola, her captain having concluded to sell her cargo here rather than risk carrying it to Benton Harbor her port of hail. She was the first sail vessel to arrive here this year, and the latest of last season.

C. F. Elmes, engine builder and machinist, Chicago, was in Milwaukee last week attending the testing of one of his patent steam steerers which he had placed on the fire boat Cataract. He had the rudder enlarged 18 inches fore and aft and 8 inches deeper, and when the steam steerer was tested it worked over from hard a port to hard a starboard in four seconds. The steerer worked very successfully and was accepted by the fire department.

The members of the E. M. B.A., Lodge 3, Chicago, at their meeting Monday afternoon, presented Captain J. Hogan, their past president, with a watch charm as a token of their esteem and good will. The charm is of gold, and is very handsome; it is in the form of a miniature flag, in pattern similar to the flags carried by the members of the Association on the mast of their vessels. On one side on a red ground are the letters "E. M. B. A., Lodge 3, Chicago," raised in white, and on the other side is engraved, "Presented to Brother J Hogan, Past President."

Your correspondent has received a very kind invitation and complimentary ticket from the M. E. B. A., No. 44, of Manistee, Mich., to attend their fifth annual reception and ball, to be held at the Manistee Opera House, Wednesday evening January 20th. 1892; I should feel much pleasure in being present, but cannot possibly attend as the E. M. B. A.'s Lodge, 3, Chicago, first annual reception and ball takes place on 20th., and the M. E. B. A's No. 68, fourth annual reception and ball on the 21st., at which I hope to be present. I well remember the Tugmen's dance I attended at Manistee in the spring of 1882, and the very happy evening I spent, and it brings to my mind the sad recollection of the loss by fire of the steambarge R. G. Peters, and of Engineer Mullen, and his second engineer, whose name I cannot remember, both of whom were present at the dance, and were making everybody happy, and the roughly enjoying themselves. I sincerely hope that the fifth annual ball of the M. E. B. A., No. 44, of Manistee will be a very enjoyable affair, and a great success, and I feel sure it will be, as the committee which comprises my old friends John Durr, Fred Otto, J. L. Muzzy, and many others will work hard to make it so.

WILLIAMS.

DETROIT, MICH.

Special to The Marine Record.

If close attention to business will do it "Beeson's Marine Guide," for 1892, will be away ahead of former issues, as Harvey is more than closely engaged in its compilation.

The date has been fixed for a hearing before the Committe on Rivers and Harbors, at Washington, of the delegates appointed at the Detroit Waterway's Convention to further the deep water canal to the coast. It is expected tha t a survey will be authorized by Congress.

Gen. O. M. Poe, will go to Cleveland Tuesday to meet a delegation from the Vessel Owners' Association. The general does not himself exactly know what they will require of him, but it is probably to consult with him regarding the subjects brought forward at their recent annual meeting relative to necessary improvements to the waterways for the season of 1892 and more particularly in the "Soo" River.

At a meeting of the Citizens' Yachting Association plans were accepted from the architect for the new club house which is to be erected on the river front, back of the Davis boat and oar works, occupying a space 34 by 70 feet, and will cost between $1,200 and $1,500. Work will be commenced as soon as the weather permits. Communications were read from Commodore E. A. Davis, of the C. Y. A., and Secretary J. S. Williams, of the Lake Erie Yacht Racing Association, asking that a committee be appointed to confer with them at their meeting to be held at the Hotel Cadillac January 19. Messrs. Geo. Newberry, Ed Bidigare E. A. Davis were appointed on the committee.

At a meeting of the Michigan Yacht Club, held Tuesday night at the hotel Cadilac, delegates were appointed to attend the meeting to be held here on January 19th to consider the advisability of organizing an association consisting of the yacht clubs of Detroit, Toledo, Cleveland and Buffalo. The name proposed for this association is the Lake Erie Yacht Racing Association. The delegates for this committee are Commodore Miller, Alex McLeod and Fred C. Whitney. The club propose to increase their membership from 150 to 200 members, the proceeds to go to the furnishing and improvement of their club house. The following committees were appointed to solicit membership: Commodore Miller, A. Day, H. S, Robinson; Messrs Henkle, Simpson, Gill, Brooker, Guenther, Warren, Ellwood, Harris, Brady, Wendell, Whitney, Reeves, Lochbiler, McLeod, Gillman, French, Baker, Tallman, Smith and Thomson.

OWEN SOUND, ONT.

Special to The Marine Record.

Capt. John Simpson is busy rebuilding the tug King, which was burned at Tober Morry Harbor last fall, and when completed will be one of the best tugs on Georgian Bay.

Steamships Alberta and Athabaska, of the C. P. R. Line, will be greatly improved this winter. They are each to have a crown promenade deck and awning similar to the Manitoba's. These decks are a great convenience and comfort to passengers, and will no doubt make the Line more popular than ever.

The completed list of winter moorings at this port are as follows: Steamers, Alberta, Athabaska, Manitoba, Cambria, Kincardine, Bayfield and a government cruiser; tugs, Douglas, Heather Belle, Aikens and Siskiwit; dredges, No. 9 and No. 4, schooner Ariel, also several yachts and other small craft.

C. H.

LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the Navigation and carrying business of the Great Lakes and the waters tributary thereto, with the intent to improve the character of the service rendered to the public, to protect the common interests of Lake Carriers and promote their general welfare.

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John Gordon, Gen. Mng'r. Northern S. S. Co	Buffalo, N. Y.
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P. P. Miller	Buffalo, N. Y.
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M. A. Bradley	Cleveland, O.
H. M. Hanna	Cleveland, O.
Thomas Wilson, Manager Wilson's Line	Cleveland, O.
Harvey H. Brown	Cleveland, O.
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THE MARINE RECORD.—OFFICIAL PAPER.

BUFFALO, N. Y.

Special to The Marine Record.

Secretary Keep, of the Lake Carriers' Association, is now at Washington in the interests of lake improvements. The Cleveland Vessel Owners' delegation are well satisfied with the work they have been able to accomplish thus far, and Secretary Keep will ably supplement the views and interests of his Association.

The Lake Erie Engineering Works have no notion of being ruled out in their bid for the water works pumps, they submitted the lowest tender, are a responsible firm and believe that local funds should be kept as near home as possible, in this instance, they are capable of doing the work and they desire the contract which they tendered for and were the lowest bidders.

In addition to his work of measuring the probable outflow of water through Niagara River. Major Stickney estimated the cost of constructing a ship-channel from Tonawanda to Port Day, four plans are considered, viz: For a channel 16 feet in depth at low water and 18 feet at mean water stage, 300 feet wide at Conner's Island and 200 feet wide below, with embankment, $8,694,824.60; a 12 foot channel at mean stage $1,341,029.80; a 9 foot channel at mean stage and 7 feet at low level $380,377.80, while a 6 foot channel at low level with a mean stage of 8 feet with embankment would cost $257,829. The engineer believes a channel of eight feet deep at a mean stage of water would accommodate all vessels desiring to pass down the river. Major Stickney is very busy at present preparing to move to his new station at Cincinnati to which he has been transferred, and to which he will go not unfamiliar with his new duties, since he was previously stationed at Louisville and is well posted on the Ohio improvements from much service on various boards in connection with that work.

KINGSTON, ONT.

Special to The Marine Record.

The schooners Bangalore and Hyderabad, have been sold by A. Gunn to Ryan & Heenan contractors for the Canadian Sault Ste. Marie canal. Mr. Gunn has also sold the schooner Singapore to J. B. Carruthers, Esq.

The ice in the vicinity of Wolfe Island is now solid. The Pierrepoint reaches within one mile of the dock and the passengers come out to her on the ice. The wind of the past few days broke up a good deal of the ice beyond Garden Island.

A copy of the specifications for the new Government steamer to be built for the fisheries protection service may be seen at Captain Donnelly's office, by any parties who desire to tender for the construction. The new vessels will be 125 feet over all, 22 feet beam and 10 feet 3 inches depth, to draw 8 feet aft and 7 feet forward. Engine to be inverted compound 18 and 38 cylinders by 22 stroke with one boiler 10 feet 9 inches by 10 feet 6 inches to carry a working pressure of 120 lbs of steel. The hull of course to be built of steel.

In the Supreme Court, Ottawa, judgment has just been given in favor of the appellants in the case of Dixon vs. Richelieu and Ontario Navigation Co. The case arose out of the wreck of the steamer Passport at the entrance to the Cornwall canal in the summer of 1886. Dixon, a commercial traveler, had trunks on board containing jewelry, etc. valued at $15,000, which were ruined by being immersed in water. He sued the company and was successful in the lower courts, but the Supreme Court reversed the judgment and decided in favor of the company. It is thus affirmed that the baggage of commercial travelers, who travel on special rates, is at their own risk in transit, they, in accepting reduced rates absolving the carriers from responsibilities for damages.

The Marine Department has been notified that the steamer William, of Charlottetown, is a total wreck at St. Pierre, Miquelon, and that the crew, nine in all, are in a destitute condition, there being no British Consul on the Island. Hon. Mr. Tupper has asked the American Consul to relieve the men's necessities, send them home and charge the expenses incurred to the Canadian Government. The Marine Department have also been notified of the safe arrival at San Francisco of the Quadra, the new steamer built on the Clyde for Government service in the waters of British Columbia. The Quadra left the Clyde on October 17th; Valparaiso December 9th, and is expected in Victoria on January 3rd, eighty days on the passage. This is considered splendid time for such a small vessel.

The Hon. C. H. Tupper, minister of marine, came to this city on Thursday and delivered a rattling speech in favor of Mr. Metcalfe. While here an important delegation waited on him and advocated the needs of Kingston harbor. Captain Gaskin laid the matter of the erection of a fog whistle at Nine Mile Point, before the minister. The captain explained that the old bell could not be heard any distance, especially when the wind was blowing on shore. During the past season, fogs had lasted three or four days at a time and once during the season a fleet of vessels carrying 500,000 bushels of grain were detained for three days between the docks and Nine Mile Point. Kingston harbor is one of the most important on the lakes and as a steam whistle could be operated with very slight increase of cost over the present arrangement the Government should build one at once. The placing of the range lights was also discussed and the matter of lighting the new dry dock by electricity supplied by the local company instead of putting in an expensive dynamo was also well ventilated. The delegation thought that as the dock would only be used for eight months in the year the light could be supplied by the Kingston company and the minister promised to lay the different matters before his colleagues and would assist all in his power to have them carried out.

MAGNET.

OGDENSBURG, N. Y.

Special to The Marine Record.

Capt. L. R. Plumb has been confined to his house several days with la grippe.

Edward Powers, chief mate of the steamer H. R. James has been seriously ill with pneumonia, superinduced by la grippe. He is now convalescent.

Joseph H. Normand, for several years steward of steamers of the Anchor Line, and later in the O. T. Co's Line, has leased the National Hotel in this city. He took possession January 1st.

Capt. Richard B. Chapman, who died January 5th, aged 75 years, was one of the first navigators on the St. Lawrence river and Lake Ontario, and commanded several of the side-wheel steamers of the American Express Line, among them the Cataract and Niagara which plied between Ogdensburg and Lewistown, in the days before the Welland canal. This Line sold out soon after the breaking out of the late war, and the United States Government purchased a number of the boats to be used as transports in the service. Capt. Chapman ran the New York, one of the boats purchased, through the Rapids to Montreal on her way to the seaboard, where she was to be delivered, and took the Northerner the entire distance to New York City. During this time he still retained his lake trading interests, owning a number of sailing vessels and having interests in others, and was associated in these enterprises with James Wade. After the breaking up of the Line, Capt. Chapman spent two years in Buffalo as superintentent of the Lake Erie Navigation Co's Line of boats. His residence was at Morristown, N. Y., up to 1865, when he removed with his family to Rye, N. Y. He resided there until 1888, when he took up his residence at Ogdensburg.

E. C. R.

GREEN BAY, WIS.

Special to The Marine Record.

The Fort Boiler Works is crowded with work in the boiler line.

The Industrial Iron Works is reporting business good in the repair line.

Capt. P. Peterson of the steamer Christian left for Manitowoc this week on a business trip.

Capt. Peter Larson, who commanded the canaler Riversides, takes command of the steamer Sawyer the coming season.

The new K. G. B. & W. railway have commenced hauling flour over to Kewaunee for the new winter route established this winter.

Capt, P. F. Thrall, owner of the steamer Preston, made a flying business trip to Milwaukee this week, looking after his boat laid up at that port.

The propeller Osceola, of the Delaware & Lackawanna Railroad system, is now running and keeping navigation open between Manistee and Kewaunee.

The Eugene Hart of the Hart Brothers Line is receiving a new crank shaft. The engines have caused them lots of trouble since she came out, by the crank not being in line.

Henry Colette of DePere is having a light draft barge built for the pulp wood trade. She is to be 128 feet keel, 28 feet beam and 6½ feet depth of hold, with a single engine 18 by 20.

John Duncan's shipyard is doing nothing this winter, and his machine shop seems to be in the same quiet stage. He intends to compete as a builder of Marine and Corliss engines, and it is hoped that he will start business booming in that line soon.

O'Leary Brothers, boiler makers, are building a 10 by 14 upright boiler of their own patent. They prove to be a durable and economical boiler, having built one last summer, 8 by 10, which is doing the work of two tubular boilers on one-third less fuel.

The steam barge P. Sawyer was successfully hauled out on Johnson's yard last week. She receives a new steeple compound engine 18 by 34 by 30, built by the Manistee Iron Works to replace the two old ones, changing her into a single screw propeller, The tug Charnley is hauled out in the same yard to receive a new wheel and out-board shaft and steam pipe and a heavier shoe.

M. E. B. A. No. 73 installed the newly elected officers Saturday evening, closing with a grand supper and entertainment. The officers for the ensuing year are as follows: President, H. F. Spencer; vice president, E. D. Rusmussen; past president, L. P. Crand; recording secretary, H. C. Wheelock; corresponding secretary, H. F. Spencer; financial secretary, Paul Dennis; treasurer, Alfred Larson; conductor, Josh Richie; door keeper, Manuel Madison; chaplain, Joe Brow. J. M.

TORONTO, ONT.

Special to The Marine Record.

At the meeting of the Canadian Marine Engineers' Association held lsst week, a letter was read from the C. M. E. Asso. of British Columbia, asking their views in regard to the amalgamation of the two societies. The matter was left over for discussion at their next meeting, at which time also the nomination of officers for the coming year takes place.

Mr. C. A. Jaques, of the well-known forwarding firm of G. E. Jaques & Co., Montreal, was in the city last week on his annual business tour, and left for the West on Saturday.

Mr. Wm. Dickinson, of the Empire Warehouse Co. of Chicago, agents for the Montreal steamers, was also in town on business connected with his marine interests, and left for home on Saturday. A meeting of the Canadian Marine Association is to be held shortly, when a great many questions of vital importance to the marine interests of the Dominion will be under discussion.

Mr. Sam Mills, engineer of the prop. Alma Munro, was married on the 6th. inst., to Miss Rees, one of Kingston's fairest daughters. The happy couple arrived here on Saturday, to settle down for life's journey. The RECORD extends its best wishes for their future happiness.

A very pleasant event took place in Cobourg last week when Miss May Ewart, daughter of Capt John Ewart, was married to Mr. W. J. Wilson of Hamilton. The bride was the recipient of many valuable presents from her numerous friends. After the ceremony the newly wedded pair left for Ottawa and other Eastern cities, and after their return will settle in Hamilton. We extend our congratulations to the happy couple.

SPARTA.

LUDINGTON, MICH.

Special to The Marine Record.

Capt. William Turgeon, manager of the Ludington and Butterville Ferry Co., is building a handsome ferry steamer for his line. The general dimensions of the boat are 62 feet overall, 54 feet water line, and 50 feet keel, 15 feet 6 inches beam, 5 feet 8 inches depth of hold. She will have a steeple compound engine 8 by 14 by 14, built by George Goodsell & Co. of this town, and a boiler tested for 125 lbs steam, building by Thomas Davies also of Ludington. Capt. Turgeon intends having the new boat completed and ready for service by April 15th.

It is given out by the American Steel Barge Co. that the two whaleback package freight steamers building at West Superior, are to run between Gladstone and Buffalo in connection with the Soo railway, which has for two or three seasons past, been doing some business out of Gladstone. The Soo is the American line of the Canadian Pacific, and through a company now being organized in Milwaukee, Canadian Pacific interests will control the boats. They will be 320 feet long, 42 feet beam, and 25 feet deep. The increase over other whalebacks in the depth of these boats is said to be on account of the gangways, which will be so constructed as to take in a part of the tumble-home portion of the hull.

The annual report of the Goverment Inspectors of vessels for the Duluth district, contains a number of interesting figures. The report shows that there are in the district 35 passenger steamers, 15 ferry, 16 freight, 42 towing, 22 pleasure and 33 miscellaneous, making a total of 133. The number of passengers carried, 246,612, shows a very large increase over that of the previous year.

Correspondence.

☞ We do not hold ourselves responsible in any way for the views or opinions expressed by our correspondents. It is our desire that all sides of any question affecting the interests or welfare of the lake marine should be fairly represented in THE MARINE RECORD.

APPLYING VARIATION.

BUFFALO, N. Y., January 12, 1892.

To the Editor of The Marine Record.

In your issue of December 24th, I noticed an article entitled "On the Curve of Variation" by H. C. Pearsons, which, according to my way of thinking, contains some misleading statements.

In speaking of the course from Buffalo to Toledo, he says, "the card swings to the right 5°, thereby taking ship to north of her chart course 2½°. Again, returning from Toledo to Buffalo, the card swings to left 5°, diverting ship 2½° to the north as before." I do not agree with him in regard to the first part of this statement. If the average or mean variation between Buffalo and Toledo is 2½° westerly, a vessel from Buffalo bound for Toledo would be drawn 2½° to the left or southward of her chart course. Therefore in shaping a course, one would add the 2½° to the right or northward of the chart course to give the compass course. The rule, as I understand it, is to allow the variation to the right if it is westerly, and if easterly to allow it to the left, to give the compass course.

In the same manner in returning from Toledo to Buffalo, the mean variation being 2½° westerly, allow it or add it to the right on all courses to give the correct compass courses. Is this not the correct version of the problem?

I do not claim to be a navigator, and merely present this view of the subject in order to get the opinion of some reader. No doubt many others would be glad to see the method of applying variation on the lakes properly settled. NOVICE.

ERRORS IN COURSES.

DETROIT, January 12, 1892.

To the Editor of The Marine Record.

In view of the late great performance of Mr Pearsons in THE MARINE RECORD, to arrive at the conclusion that the mean variation between two places, has to be applied in shaping a course, it seems to have escaped his notice, that courses as found by lake charts, always tend to take a vessel North of her intended course, independent of the change in variation.

For instance, a course drawn in the chart between two places in the vicinity of Buffalo and Toledo, is found by chart about 3° or ¼ point different at Toledo, from what it is at Buffalo, the course at Toledo being ¼ point more Northerly than at Buffalo. Consequently, on the trip from Toledo to Buffalo, the vessel is carried to the North, and on her return trip also to the North of the line in the chart by the course found at the place of departure. This result is due to the conical projection of the chart, and its coincidence with the phenomenon attending the change of variation causes the error due to such change, to be increased in the instance mentioned by ¼ point. To avoid such errors courses in lake charts have to be measured with regard to the meridian in the middle between two places; a great inconvenience in practice.

A close inspection of the chart for lake Erie, reveals besides the fact that its net-work is not correct. The distance between the parallels of 41° and 43° of latitude is ⅝ of an inch or 4 statute miles too short, causing an error in courses of nearly ⅛ of a point. The scale on which the chart is drawn is 1 to 400,000 consequently the distance between the parallels mentioned, ought to be 21⅝ inches, but it is only 21¼ inches. The difference of ⅜ of an inch is too great to be accounted for by the process of printing, as the degrees of longitude are found to be nearly correct. Thus, the relation between the degrees of latitude and longitude in the charts is wrong. An offieial chart with a difference of 4 miles in 138 miles is a unicum, and so are conic projections for charts of navigation, which lead to such errors in courses as mentioned above.

To come up to our modern times lake charts have to be on Mercators projection; therefore, a lake survey should not be confined to the re-examination of certain special areas, but include the publication of modern charts. In the chart for the North end of Lake Michigan, the courses indicated from South Fox to Sheboygan, and from North Manitou to Milwaukee are from ⅛ to ¼ point out of direction, and the last mentioned course is given ¼ point wrong. Furthermore, S.S. W. ¾ W. reads in the chart S. W. by S. ¼ S.; N. N. E. ¾, E. reads N. E. by N. ¼ N. etc.; lake charts abounding with such misnomers. Look where we may, the absence of a Marine Department is visible even in the smallest matters pertaining to navigation. SPECTATOR.

A REPLY TO "SURVEYOR".

DULUTH, MINN., January 11, 1892.

To the Editor of The Marine Record.

It is gratifying to meet a man of the type of our new freind "Surveyor" taking part in the discussion of nautical questions in your journal.

His comments on the Toronto jury of farmers etc., deciding on the merits of nautical questions; on the practice concerning the taking of courses from charts; on the subject of changing the character of our lights; and his deserved compliment to our shipmasters, show a keenness of observation and a ripeness of practical knowledge that are refreshing.

But in other parts of his remarks, he fails like the rest of us by mistaken and imperfect ideas of his subject.

Concerning the effect of change of variation, he stumbles on the same stone that other good men have stumbled on since the lakes were navigated; so he is not the first, but merely the last good man who has failed to see the difference between "variation" and the "change" of variation. That "change" of variation always takes us to the north, whether we sail up or down the lakes, while variation proper may take us either to the north or south, if not taken into consideration in shaping course.

With regard to his notions of adopting the nautical or sea mile as the unit of measure for distance on the lakes, he is equally off.

If the earth were a perfect sphere, as it is supposed to be in navigation at sea, the nautical mile would be a suitable unit for distance in all places; but unfortunately this is not the case.

The earth being a spheroid instead of a sphere, the minute of one degree, or nautical mile, is of variable length, different in different places, which would make it very unfit for a unit for distance where precision is required, as on the lakes, where we are surrounded on all sides by accurate measurements, and where distance by water is but a part of land routes.

One minute of the equator is 6,087 feet; one minute of the meridian to latitude 80°, which embraces most of the navigation of the globe, is 6072 feet, and the mean of these, or 6080 feet, has been adopted for the sea mile for ocean navigation the world over.

But this is too large formiddle and lower latitudes, as vessels find themselves ahead of their reckoning. The average of a minute of a degree on the meridian up to 15° of latitude, is 6047 feet. Accordingly the United States Navy has adopted 7½ fathoms, or 45 feet, as the distance on the log-line for one knot, when used with a 28 second glass. This makes the mile less than 6000 feet, keeping ship behind her reckoning.

The nautical mile is not a concrete quantity like other units, but merely a ratio—a certain part of a whole, without regard to size.

There are just as many minutes or miles in the equator of the schoolroom globe, as in the equator of the terrestial globe, though not quite so many statute miles.

It should be remembered that at sea the nautical mile is used in connection with nautical astronomy, where it must be at once a measure of distance and a measure of angles; and for that purpose, notwithstanding its variable character as a lineal unit, it is the best, and practically the only unit available.

But on the lakes we have no nautical astronomy. The Government has done all this work better than we could hope to do it. Every lighthouse is an illuminated monument of known place. Moreover, we have standard time established, so that we have absolutely no use for nautical astronomy on the lakes. and as a consequence, no use for the nautical mile of variable and uncertain length.

What "Surveyor" means by declining to discuss his position, we do not know; but still we appreciate his remarks, and hope he will "call again". H. C. PEARSONS.

OUTLINE FOR A MARINE DEPARTMENT.

CHICAGO, ILLS., January 11, 1892.

To the Editor of The Marine Record.

The intention to establish a Marine Board instead of a Marine Department, is to bless the country with a cripple instead of a well formed child, and postpone the revival of the merchant marine in the foreign carrying trade—ad infinitum.

The United States delegates to the International Marine Conference in their report to the Secretary of State recommend the formation of a separate department for the merchant marine, and their reasons may be briefly stated as follows:

The absence of a body for discharging in this country such functions as pertain to the Board of Trade in England. The absence of proper laws to ensure the necessary security for life and property at sea, so far as the strength of vessels, proper equipment, etc., is concerned. The insufficiency of the present system of examination of masters, mates, pilots and engineers. The necessity of making examinations of officers compulsory and general, and of establishing a higher standard of competency. The present scattered condition of bureaus for the merchant marine among several departments, on account of which uniformity of action is wanting and sometimes duplicate work is pertormed.

A Marine Department for discharging all the functions mentioned and other duties pertaining to it, would have to consist of the following divisions:

Division 1. Scientific branch. Nautical schools, education and examination of masters, mates, and engineers.

Division 2. Technical branch. Construction and equipment of vessels, inspection of boilers etc.

Division 3. Commercial branch. To attend to all matters of a commercial nature.

Division 4. Legal branch. Investigation of all casualties at sea involving greater loss of property and loss of life, revision of marine laws and treaties etc.

Division 5. Experimenting branch. To investigate wanted inventions and improvements. To advance nautical science.

Division 6. Statistical branch. Designating, admeasuring and documenting of vessels etc.

Division 7. Engineering branch. Lighthouses, buoyage, fairways, harbor and river improvements.

Division 8. Hydrography.

Division 9. Life saving stations.

Division 10. Marine hospitals.

Division 11. Fisheries.

The Marine Board with which the country is to be blessed is without the first five divisions forming the head and body of a properly organized Marine Department; it is only a consolidation of the existing divisions 6 to 11 inclusive, forming the tail; a tail without a body from which to receive life. This tail is to form an appendage and incumbrance of the Treasury Department. If it be possible to ingraft this tail sufficiently deep, not to remain disjointed, such a masterpiece in the surgical line would be a fit object for exhibition at the World's Fair. But for all practical purposes the Marine Board is an entire failure, because the question of giving life to the Marine Board now precedes the question of revising the merchant marine.

In their report to the Secretary of State, the United States delegates states, that "in regard to construction and equipment of vessels, qualification of officers of vessels, the United States is far behind other countries." From which follows, that an enormous amount of work is to be accomplished by Division 1 and 2 before we get in line with other countries, and that, therefore, these divisions cannot be dispensed with. To compete with foreign vessels nothing less than the European standard will do. To raise American masters and mates to this standard is a Herculean task, and without nautical schools impossible. There are no schools, no teachers, hardly any books and tables of American origin to make a decent start with. Without a scientific division, to organize and supervise all these matters, examination of masters and mates would be a farce. In a similar condition are matters pertaining to the construction and equipment of vessels, requiring the installment of the best technical talent obtainable.

The close connection of shipping with commerce explains the necessity of Division 3 to collect and distribute all such information pertaining to shipping, as is of value to the vessel owner.

A legal branch is necessary for several reasons. Official wreck inquiries with the assistance of other divisions have to be made to maintain a high standard of efficiency of marine officers, and punish neglect by depriving guilty parties of their certificates. Besides there is plenty of other work requiring legal knowledge, as the unification of marine laws etc.

A division for experimenting and the advancement of nautical science is a great desideratum. For, without such division many valuable improvements and inventions do not find the consideration they deserve and the advancement of nautical science for greater safety of life and property at sea, is let alone.

To cope with other nations and be respected abroad a Marine Department must be the embodiment of all the virtues of the nation; else it is a failure. All talent necessary to build, equip and navigate vessels must be of the highest order for a Marine Department, superior to any talent in the same line employed by private parties; for only superior skill and knowledge in strict Government supervision can make the revival of our merchant marine in the foreign carrying trade, a success.

The dwarfish attempt at reform, to begin at the tail end instead of at the head, is illustrative of the powers that be and what may be expected of them in the future.

JOHN MAURICE.

TERRESTRIAL MAGNETISM.

From the annual report of the Hydrographer to the Bureau of Navigation it is learned that hitherto the investigations into the subject of terrestial magnetism have been confined almost exclusively to the variation of the compass, but with the evolution of modern ships the necessity of giving attention to the dip and horizontal force has thrust itself forward, which leads the hyorographer to state that I believe it to be necessary that the Department should take steps for the collection of data relating to these latter elements, as well as the variation. For the past five years this Office has been engaged in the collection and discussion of observations of the magnetic declination, (variation of the compass) dip and intensity. Attention has been almost wholly confined to the treatment of the variation of the compass in order to supply the correct direction of the magnetic meridian on the charts, and it is believed that this part of the subject can now be successfully dealt with. But I desire to call attention to the lack of information respecting the dip and horizontal force. These data for all iron and steel vessels, are very essential for correct compass work, and they should be observed and embodied in isoclinic and isodynamic charts for issue to United States vessels, and for the benefit of mariners generally. There are at present no correct general charts of these kinds. In a few months after a modern cruiser is launched the coefficients for all the compasses on board are known. With the coefficients, the changes in the deviation of any compass in any part of the world, can be readily computed without the time consuming process of swinging ship, provided the dip and horizontal force are known. Hence these data become of vast importance to the Navy Department and to the mercantile marine, and it is recommended that dip circles and magnetometers be supplied to the vessels of the Navy, and that reports of the results of the observation of the elements be required.

Notes.

THE shipping of Nova Scotia shows a decrease of 9 vessels and 741 tons during the past year. There are now on the registers of the Province 2,775 vessels of 462,404 tons. The total number of vessels now registered in the maritime provinces is 3,950, of 680,054 tons.

THE right ring is evidenced in a communication from Mr. A. Vanderbilt, of the Wheeler Condenser Works, New York, who thinks that in five years, along the coast of the United States, there will a force of 25,000 naval reserves armed, equipped and ready for service on all occasions.

IT is reported that the New York office of the American Steel Barge Co., owners of the whaleback steamers and barges, will run a line of barges from Mobile to the West Indies to carry coal. This company or its leading stockholders, owns large Bessemer ore properties in Cuba, and it is stated that it will go largely into the importation of Bessemer ores, and establish at some Atlantic or Gulf port a distributing point for these ores, erecting large handling and conveying machinery, etc.

PROFESSOR H. A. HAZEN, of the Washington weather bureau, than whom no man is better qualified to voice an opinion on the subject, has expressed doubt as to the success of the dynamite rain-making theory. There is no doubt that great concussions frequently produce rain, he says, and this theory he has traced to Plutarch, who lived long before the invention of gunpowder. In the war of the rebellion it was shown that only about seven per cent of the battles were followed by rain.

A company has been formed to construct a canal from the head of Port Moody to the Pitt river, British Columbia, connecting the water of Burrard inlet with the fresh waters of the Pitt and Fraser rivers. The distance, according to the report of the engineers who have made a preliminary exploration of the projected line, is less than 3½ miles to tidewater in the inlet from the banks of the Pitt river, and a little over four miles to those of the Fraser, an entrance to which will be made by the first named stream a short distance below the railway bridge.

A CORRESPONDENT writing to the New York *Journal of Commerce* asks if they can be held for the whole of an unpaid wharfage bill against a schooner that we own only one-sixteenth of? We are not agent or consignee of this vessel, but part owner only. The inquiry elicited the following reply. Ordinarily any member of a partnership may be held liable for the whole of a debt owing by his firm. But an act of Congress of June 26, 1884, provides in section 18 that "the individual liability of a shipowner shall be limited to the proportion of any or all debts and liabilities that his individual share of the vessel bears to the whole; and the aggregate liabilities of all the owners of a vessel on account of the same shall not exceed the value of such vessel and freight pending." Under this law our correspondents are exempt from liability for more than their proportionate share of the debt unless they personally made the contract or adopted it as their own after it was made. See 35 Fed. Rep. 669.

CHAIRMAN BLANCHARD of the House Committee on Rivers. and Harbors states that in order to enable the committee to bring in a river and harbor bill at an early day it will be absolutely necessary that the time of the committee be absorbed as little as possible in hearing delegates that seek to make arrangements in support of the improvement of particular localities. Delegates are, therefore, he said, not expected or encouraged and will not be heard except upon application previously presented through a Senator or Representative and after the same has been allowed, a date fixed and a specified time not exceeding one hour for a given project alloted. After February 10 such delegations will not be heard at all. Senators and Representatives will not be, as heretofore, formerly invited to appear before the committee, but such as present themselves will be accorded a brief time to present such matters as they desire. Mr. Blanchard says the Engineer reports are very full, and but little else is needed by the committee in its work.

ENGINEER WM. MACDONALD, of the ferry steamer J. G McCullough, of the New York, Lake Erie & Western R. R. Co., writes the Forrest Silver Bronze Packing Co., No. 115 Liberty street, New York, as follows: In answering your favor relating to the "Silver Bronze Packing" on the double-ended screw ferry boat John G. McCullough, of the N. Y., L. E. & W. R. R. Co., I am pleased to say that it has given full and complete satisfaction. Your packing holds water and steam under high pressure without requiring any soft packing to help it out, and without the usual severe friction of other metallic packings under high steam. In my opinion, one of the best features of your packing is its automatic action —for since it requires no attention or adjustment, the liability of its being screwed up too tight is entirely removed, and the danger, common to other metallic packings, with which I am familiar, of melting them out or heating the rods, is avoided. I always take pleasure in recommending your "Silver Bronze Packing," because I believe it to be the most reliable and economical, also the best packing in every respect, in the market. I take great pride in showing it in operation on my engine to all who are in a position to appreciate a good packing, and shall be glad to have you send anyone aboard of the McCullough whom you wish to have see it working. This boat is at Pavonia Ferry, foot of Chambers street, New York city, every 20 minutes, daily.

ON LIGHTHOUSE CHARACTERISTICS.

The plan for a systematic arrangement of the United States light house establishment, in so far as it relates to the characteristic of lights, as proposed by Captain F. A. Mahan, corps of engineers U. S. A. engineer secretary (temporarily) of the lighthouse board, and a full account of which was printed in our issue of November 26, 1891, advocated a system of flashing characteristics. The discussion pro. and con. of this proposed system has not been so general as the importance of the change to lake mariners would seem to demand in the best interests of navigation, and to further elucidate this feature we quote from a paper by Sir W. Thomson, read at the Naval and Marine Exhibition, held in Glasgow February 11th. 1881, in which the subject has been handled in a comprehensive way.

"For a lighthouse to fulfil the reason of its existence, it must not only be seen, it must be recognized when seen. If seen, and not known, a lighthouse is of no use; if not seen, it certainly could not be of use. There has been much of discussion as to what is the primary and most important quality of a lighthouse. Penetrative power—to allow the light to be seen in thick weather at as great a distance as possible—is, of course, the first object to be striven for. The next question is —How to make use of a lighthouse when seen? If a sailor descrying a lighthouse from a great distance is in doubt whether the light is on a fishing-boat a mile off, or on the masthead of a steamer three miles off, or on a lighthouse six miles off, it is obvious that the lighthouse in merely letting its light be seen, had achieved but a small part of its task. The question to be considered is how to know one light from another—how to know a light descried just above the horizon, and dipping now below the horizon, lost sight of for a quarter of a minute, again seen, lost for a little time, and again seen continuously—to recognize it with certainty, and without loss of time, in such circumstances, I take these two cases because, when a celebrated lighthouse engineer was with me on one occasion, I said to him, "Look at that light and tell me what it is; is it a masthead light, or what is it?" He could not tell. And he fully admitted after that, what he never admitted before—namely, that it was possible to confound a lighthouse light with a light on a steamer's masthead.

Setting aside colour—now generally admitted to be indefensible, as a distinction for lighthouse lights, except in the proper use of it, which is to distinguish different directions of the light by coloured sectors to mark rocks or other dangers, or the safe limits of navigable channels—we find all the characteristic qualities of lighthouses to come under one or other of the following three descriptions: 1, flashing lights, 2, fixed lights, 3, occulting or eclipsing lights. The well-known name "Revolving lights," is habitually limited to flashing lights; but it is liable to ambiguity, because the same revolving mechanism is also applied in many cases to produce the eclipses of "occulting or eclipsing lights." An official description of the revolving light is as follows:

Rev.—Revolving light, gradually increasing to full effect, then decreasing to eclipse. (At short distances and in clear weather a faint continuous light may be observed.)

This, in fact, includes the description of the flashing light:

Fl.—Flashing—Showing flashes at short intervals, or groups of flashes at regular intervals.

A combination of the fixed and flashing qualities, though comparatively rare, constitutes an important characteristic light described as follows:

F. and Fl.—Fixed light with addition of white or colored flashes, preceded and followed by a short eclipse.

Thus we have really very little of complexity in the fundamental classification into the three descriptions of flashing, fixed and occulting.

In the flashing light, the light is visible for only a short time—a fraction of a second, or from that to five or six seconds and then disappears; and, for a much longer time than the duration of the flash, it remains visible, until it again flashes out as before. In the fixed light there is no distinguishing characteristic whatever, but merely a light seen shining continuously and uniformly. The occulting light is visible during the greater part of its time like a fixed light, shining continuously and uniformly. Characteristic distinction is given by a short eclipse, or by a very rapid group of two or three short eclipses, or of short and longer eclipses recurring at regular periods, "flashes of darkness," as they have been called, cutting out, as it were, from the light its mark, by which it may be distinguished, and recognized to be itself and nothing else, in the very short time (from half second at the least, to seven seconds at the most) occupied by the group of eclipses.

[*Continued in our next Issue.*]

THE MARINER'S COMPASS.

A writer in the *North China Herald* of Shanghai devotes a learned article to detailing and discussing the facts regarding the claim of the Chinese to have invented the mariner's compass. They did not learn the properties of the magnetized needle from any other country. They found it out themselves, though it is impossible to point to the man by name who first observed that a magnetized needle points north and south. He suggests that it came about it this way. The Chinese have in their country boundless tracts of ironstone, and among these no small portion is magnetic. Every woman needs a needle, and iron needles early took the place of the old stone needles, and were commonly used before the time of Ch'in Shihhuang —that is, more than twenty-one centuries ago. Whenever a needle happened to be made of magnetic iron, it might reveal its quality by falling into a cup of water, when it happened to be attached to a splinter of wood, for example. It came in some such way to be commonly known that certain needles had this quality. The great producing center for magnetic iron is T'szchon, in Southern Chihli. This city was very early called the City of Mercy, and the magnetic stone produced there came to be known as the stone of T'szchon, and so *i'szshih* became the ordinary name for a magnet. Later, the Chinese began to speak of the city as the "City of the Magnet," instead of calling it the "City of Mercy." The polarity of the magnetic needle would become known to the Chinese of that city and its neighborhood first. The first one to notice this polarity would be some intelligent person who communicated the fact as an unaccountable peculiarity in an age when omens and portents were diligently sought for in every natural object and phenomenon.

The earliest author who mentions the "sonth-pointing needle" lived in the fourth century B. C. There can be no reasonable doubt that the polarity of the needle was known at that time. The discovery of the fact must have preceded the invention of any myth embracing it. As to the discovery, there is no reason to suppose it was in any way foreign, because the Chinese use an enormous number of needles, and have an inexhaustible supply of iron-tone. But, though the polarity was known, it was not turned to a practical use till the Tsin dynasty, when landscapes began to be studied by the professors of *fengshui* or geomancy. There was at that time a general belief in the magical powers of natural objects. This was a Buddhist doctrine, and it took firm hold on the Chinese mind of that age. The Chinese philosophers of those times taught that indications of good and ill luck are to be seen all through Nature. The polarity of the needle would take its place in this category of thought. Though it is not distinctly mentioned by writers of the fourth century, yet to their disciples it became an essential part of the landscape compass which the professors of *fengshui* all use. Kwo Pu, the founder of this system, died A. D. 324, and it was not till four centuries later that the *fengshui* compass began to assume its present form. The compass used by the professors of geomancy for marking landscape indications was first made about the eighth century A. D. It was of hard wood, about a foot wide, and it had in the center a small well, in which a magnetized needle floated on water. On the compass were inscribed several concentric circles, as on the wooden horizon of our globes. They embrace the twelve double hours, the ten denary symbols, eight diagrams, and other marks. This compass was used in preparing a geomantic report of any spot where a house or tomb was to be constructed, so that the construction might not be upon an unluckly site or planned in an unlucky manner. At the same time there was living a Chinese who had studied Hindoo astronomy, and was the imperial astronomer, and also a Buddhist priest. He noticed that the needle did not point exactly north, and that there was a variation of 2° 95′ [probably a misprint.] This variation went on increasing till a century later,—that is, till the ninth century. A professor of geomancy then added a new circle to the compass. On this improved compass the first of the twelve hours begins on the new circle at 7½° east of north.

The compass, it will be observed, grew out of the old astrological report or nativity paper, calculated from the position of the stars, and prepared in the Han dynasty by astrologers as a regular part of social life, especially when marriages were about to be solemnized. Some of the old astronomical circles are preserved in the new geomantic chart. This was the compass used when Shen-Kwa wrote on the south-pointing needle in the eleventh century. This author mentions that any iron needle acquires polarity by rubbing it on a piece of lodestone. He alludes to the variation as a fact which he himself had observed, and speaks of the south-pointing needle as an implement used by the professors of geomancy. By them it was employed in the form of a float upon water. After this, in 1122, an ambassador to Corea describes the use of the floating needle on board ship in which he made the voyage. This is the first instance, the earliest by more than a century, of the use of the mariner's compass on board ship, found as yet in any book, native or foreign. The existence of the book in which this is recorded settles the question of the first use of the mariner's compass at sea in favor of the Chinese. At that time the needle floated upon water, supported by a piece of wood, but in the Ming dynasty some Japenese junks engaged in piracy were captured by the Chinese, and the compass in use on board was found to have the needle dry and raised on a pivot, while still pointing southward. The Japanese had learned from the Portuguese navigators to make a compass of this kind, and probably the needles they used were brought from Europe. From this time, the Chinese adopted the principle of a pivot, and made their compasses without a well of water in the middle to float the needle in. Charts of a very rough kind were probably used, but how far is not known. What is known is that the junk master was aware of the direction in which the needle must point to reach the port to which he was going. In the Sung dynasty, embracing part of the tenth, as well as the eleventh, twelfth, and part of the thirteenth centuries, Chinese junks went to Persia and India. The Arabs trading to China directly would learn at that time the use of the compass, and would apply it on board their dhows. From them the Europeans learned this useful invention.

The credit of the discovery, both of the polarity of a magnetized needle and of its suitability for use by mariners at sea, must therefore, according to this writer, be given to the Chinese. It is China also that has the credit for having first noticed that any iron needle may be polarized by rubbing it with a magnet. In the thirteenth century the Arabs used a floating compass on their dhows. The needle was made to float on the water by attaching it crosswise to a cornstick or splinter of wood. A magnet applied to it drew it into a north and south direction. They would use Western notation to mark the quarters and intermediate points on the horizon. When, therefore, the mariner's compass was adopted from them, the Chinese twenty-four points were not communicated. In the European compass the notation of thirty two points is Western, and rests on the winds and the sun. In the Chinese primitive mariner's compass the notation is that of the professors of geomancy, and rests on the old astrological division of the horizon into twelve double hours. From the Arab account we learn, what the Chinese accounts do not tell us, that the Chinese floated the needle by inserting it in a splinter of wood.

The Marine Record.

ESTABLISHED 1878.

Published every Thursday, at 144 Superior Street, (Leader Building,) CLEVELAND, O.

IRVING B. SMITH. }
CAPT. JOHN SWAINSON. } - - - Proprietors.

BRANCH OFFICE,

CHICAGO, ILLS., - - - 252 South Water St.

THOMAS WILLIAMS, Associate Editor.

SUBSCRIPTION.

One copy, one year, postage paid, - - - - - - $2 00
One copy, one year to foreign countries, - - - $2 00
Invariably in advance.

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Entered at the Post Office at Cleveland as second class mail matter.

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Pertaining to the Editorial and Business Departments of THE MARINE RECORD should be addressed,

"SMITH & SWAINSON,
148 SUPERIOR ST.,
CLEVELAND, OHIO."

CLEVELAND, O., JANUARY 14, 1892.

PUBLISHERS' NOTICE.

At this time of the year the majority of our subscribers who are actively engaged in the sailing interests during the season of navigation, are mending their nets and otherwise laying back ready for the siege of another season.

To those who are at a distance we desire to say that the date on their slips or wrappers will show the expiration of their subscriptions to THE MARINE RECORD, there is not, or should not be any hieroglyphic mystery about these figures, so that the dates being deciphered, accounts may be squared, and a new departure taken. Amounts small in themselves represent a most important sum in the aggregate, and this is what we are after at about this time.

CONGRESSMAN LOCKWOOD, of Buffalo, proposes to make a vigorous fight in this Congress for an increase in pay for the keepers and surfmen employed in the life saving service. At the present time the former receive only $750 a year, while the latter risk their lives at $50 a month and are only retained eight months in the year. In no class of public service are the employees worked harder for less pay than the surfmen. Petitions from all parts of the country ask that keepers be paid $1,000 a year and that surfmen receive $75 a month. They should also be entitled to marine hospital privileges in the event of accident or sickness brought on by exposure to the weather. All seamen are eligible to admission in the marine hospitals and they ought not to be barred out simply because they have joined the life saving service for a term of months or even years.

AN important work for the Census Bureau, since it seems that no other department is either authorized or interested, would be to ascertain the number of men employed in the actual service of the lake marine, both in steam and sailing vessels. It certainly reflects no credit on the workings of the several bureaux controling the Mercantile Marine of the United States, when they confess their inability to compile such statistics, and the lake commerce as representing a majority of the mariners of the country one would think might deserve enumerating, and this too for obvious reasons.

THE recent tour of the lakes by Lieutenant Carden, under the auspices of the Treasury Department, will no doubt eventuate in the construction of the two new revenue cutters in these waters. Smuggling, a disregard of the rules of the supervising inspectors, and the proper patroling of the lake areas, call for a much better service than is now placed under the control of the department, and to this end the lakes are justly entitled to the service which modern requirements so justly demands.

THE treaty of 1817 prohibiting even the building of war vessels on the lakes is becoming obnoxious to a majority of our citizens and shipbuilders. There are now some of the finest equipped iron and steel shipbuilding plants in the United States in full working order at the principal lake ports, and for them to be ruled out of competition in the workshop of the Nation, through the wording of a century old treaty which no longer bears any significance, is more than the enterprising spirit of western progression are willing to brook, or calmly submit to for any longer a term than legislative discretion can be brought to bear on the features of the treaty.

FOR IMPROVED LAKE NAVIGATION.

THE delegation of Cleveland vessel owners now at Washington in the interests of improvements and aids to navigation, rendered necessary on the Great Lakes by the vast strides which North-western commerce has taken during the past decade, are fulfilling a mission which ought to prove invaluable to all interests.

Contrary to the impression entertained by a circle of commercial men, the Cleveland delegates were not commissioned to advocate a deep waterway to the coast, their province, aims and ambition is merely to procure for the lakes a free, unobstructed and well lighted inland waterway, or in other words, to enlarge upon the plan of improvements commensurate with the volume and capacity of the present trade and tonnage. Tens of millions of dollars are not asked for, but simply that modern commerce may be facilitated in so far as the Federal Government exercises its undisputed control and jurisdiction over the channels and fairways now in use.

Men who are acquainted with these waters and look back only for a few years, are astounded at the increase in tonnage and the volume of commerce now transported. Daily we hear the statement that the present stage of the lake marine and its colossal importance was never even dreamed of only a score of years back. Full powered high classed 3,000 ton steel freight and passenger steamers speeding over the lakes in all directions, would have appeared nothing less than a miraculous intervention, or a fitting sequel to a commemoration of a National millenium of prosperous existence, yet, these facts are accomplished, and the lake cities of Detroit and Cleveland have the honor and distinction of putting afloat more high-classed iron and steel freight steamers than any other ports in the country. While Bay City has sent her high-classed productions of modern steel tonnage to assist in the commerce of the Pacific, the minor port of Superior, Wis., situated at the head of Lake Superior, and comparatively unknown a decade ago, has astonished the world by producing a freight carrier which, whether strictly original in design or otherwise, has been the first city to demonstrate the applicability of a form or type which is destined to exercise a universal influence in the art of marine architecture and the building of future freight carriers; already is that influence being felt, if imitation of the principles of construction is any criterion, and the effete East has taken a fresh lease of naval workmanship in the reproduction of the type first put together for the purposes of commerce in a corner of the earth which is destined to prove a commerciel center of no small importance to the universe.

This digression has seemed in line when speaking of the almost incomprehensible wave of progression which has swept over the States bordering on the Great Lakes. From an Indian canoe to the finest equipped tonnage afloat, almost within the experience of one lifetime, is a record which ought to awaken the susceptibilities and stir up the legislative wisdom of the present Congress. Ten steel freight steamers having a capacity of nearly 30,000 tons is the record of a lake shipyard for one year, and this tonnage was not hewn out of the woods, bolted together and put afloat to be finished in the next few years, but well built modern steel steamers liberally equipped, handsomely fitted, and thoroughly completed in every detail of construction and apparel.

In the face of the above showing the action which our prominent citizens have taken in petitioning Congress for a due share of attention cannot be questioned; legislators from the West and North, are, or ought to be fully conversant with the march of civilization in the Northwest, while those from the South and East can the better subserve the broad interests of the Nation by voting favorably on the appropriations which commerce more than class, or special industries, demands of them. The chairman of the River and Harbor Committee is well aware of the National interests involved in the transportation carried on over the Great Lakes. The chairman of the Committee on Commerce, is equally placed at his discretion to forward by all means in his power, the interests of commerce. The chairman of the committee on appropriations, represents a State which derives considerable wealth from its proximity to Lake Michigan, and although some may take a pessimistic view of the effort now being made by the best intelligence of the Northwest, to favorably influence Congress, yet the strong appeal and representation will awaken such an interest in the minds of our legislators that the fifty second Congress, however liberal it may deal with the interests now brought to its notice, can only enter upon the confines of work which future Congresses will heartily favor in the continuance thereof, notably the 21 foot fairway, duplicate channels, a re-survey of the lakes, and other equally important projects, all of which the keenest minds perceive as being essential to the advancement of the lake marine, and demanded by the ever growing commerce of the North-west.

"RIGHT" AND "LEFT".

With the mititary precision to be expected from the warlike Teutons, we find that orders have been issued to the North German Lloyds and the Hamburg American Line, to substitute the words "right" and "left" when altering the course of their steamers, instead of using the time worn terms of "port" and "starboard".

The German Emperor, on learning last year that a contradiction existed in the wording and carrying out of the orders as given to the whealsman, cast about to effect a change more in consonance with his own ideas of nautical phraseology, and thus was the order evolved, made compulsory in the navy, adopted in the two most important Lines of merchant steamers and is now generally endorsed by the German mercantile marine.

The orders as given universally up till last summer, when the German edict went into force, exhibit a singular tenacity of custom, which only a mariner would attempt to justify on the grounds of not desiring innovations in their rules of phraseology, even if it was clearly demonstrated that the change was made in the best interests of their profession.

The need for a revision of the ancient terms came into force when the wheel was adopted for steering in lieu of the tiller purchase.

The order to port under the tiller system, when all vessels were so steered, meant that the tiller head should be so moved, and the action of the steersman could be clearly observed by the officer in charge of the deck.

To pursue this subject a little further we find that the order to "port" meant that the tiller should be moved to "port", and although this action sent the vessel's head to "starboard" it was or could not have been thought of any moment how the vessel's head turned as long as the order to the steersman was distinctly understood and obeyed; hence "port" meant port the tiller head, and on it being drawn over to port, the order was satisfactorily filled. It will thus be seen that a similarity existed between the given order and its execution.

With the adoption of the wheel gear the order lost this duplication of action and command, and "port" no longer meant the rolling or movement of the wheel to "port", as the order to "port" called for the wheel to be rolled to starboard, an action contrary to the express word, though again reaching a similarity in movement between the rolling of the wheel and the vessels head, or the movement of her bow in obedience to the rudder, as the wheel and vessels head moved in the same direction but to "starboard," and directly opposite to the given order in so far as the alteration of course and rolling of the wheel were concerned.

It is difficult of conception for the un-technical mind to grasp the situation in which mariners found themselves when the motive power of directing their vessels underwent the change from rudders to wheels, they seem to have accepted the situation and retained their phraseology, misnomers abounding they must have experienced a full share of anxiety until the gradual introduction of the present system become generally applied and known to all classes of seamen.

The words "right and left" in lieu of "port and starboard" as they relate to steering, has been strongly advocated by writers in THE MARINE RECORD, but knowing the conservatism of mariners in matters effecting their

technical customs and the great disfavor with which they usually look upon innovations, the change was not advocated, nor is it now, although a contemporary points out. that as soon as the order "right" is given, the telegraph is moved to the right, the wheel is revolved to the right, the ship turns to the right, the rudder-indicator points right, the rudder itself moves right, and the steering-mark on the compass as well; and so vice-versa when the order "left" is given. Nothing can be simpler. and no possibility of mistake can arise.

Desirable changes and modern improvements have a way of forcing themselves to the front, and from American and English pilots handling these German steamers it is learned that no difficulties are experienced in using the new words of command, and in fact they are better liked than the old time method of acting contrary to the given order.

LEGISLATION INIMICAL TO SHIPBUILDERS.

That the United States tonnage should be built at home is admittedly the wish of the country at large, what then is the meaning of the Bill introduced by Mr. Gibson of Louisiana to provide a United States register for the foreign built and equipped steamers Foxhall and S Oteri?

This method of admitting foreign built tonnage to American registry has been accomplished successfully before, even in the last Congress, and with the precedent in view it is possible that the above named steamers may also be sneaked in under the Stars and Stripes.

The coast shipbuilders should array themselves in a solid phalanx against such a bill, which is to say the least destructive to their industry and derogatory to the best interests of the nations maritime commerce. In the event of foreign built steamers invading the Great Lakes we venture to say that measures for their naturalization to entitle them to compete with domestic built tonnage would be so closely scanned that unless the wreck reports showed clearly the expenditure necessary to gain admittance they would never be tolerated.

For the benefit of those who may not have noticed the Bill of which we speak we herewith produce it:

That the Commissioner of Navigation is hereby authorized and directed to cause the foreign built steamers Foxhall and S. Oteri, of New Orleans, Louisiana, purchased and wholly owned by American citizens, and repaired by them, to be registered as vessels of the United States.

Section 2. That the Secretary of Treasury be, and hereby is, authorized and directed to authorize and direct the inspection of said steam vessels, steam boilers, steam pipes, and the appurtenances of said boilers, and cause to be granted the proper and usual certificates issued to steam vessels of the merchant marine, without reference to the fact that said steam boilers, steam pipes, and appurtenances were not constructed pursuant to the laws of the United States and were not constructed of iron stamped pursuant to said laws; and test to be applied to the inspection of said boilers, steam pipes, and appurtenances will be the same in all respects as to strength and safety as are required in the inspection of boilers constructed in the United States for marine purposes, save the fact that said boilers, steam pipes, aud appurtenances not being constructed pursuant to the requirements of the laws of the United States, and are of unstamped iron, shall not be an obstacle to the granting of the usual certificate if said boilers, steam pipes, and appurtenances are found to be of sufficient strength and safety.

Legislators from the lake districts would do well to closely scrutinize measures admitting to American registry foreign built tonnage, as the same arguments might be brought to bear if it was desired to flood the lakes with foreign built tonnage to the entire exclusion of the immense shipbuilding industries already established.

AIDS TO NAVIGATION.

The committee of Cleveland vessel owners, sent to Washington to facilitate the legislation required on aids to navigation, have formulated their own bill in accorddance with the wishes expressed by the several departments with whom they consulted.

The bill now drawn up asks for a total appropriation of about $700,000, and is distinctly for needed lights, lightships and fog signals for Lakes Ontario, Erie, Huron, Superior and Michigan, besides a number of changes in the Detroit and St. Mary's rivers, all of which are admitted as being not only essential but necessary, and from the good will evinced by Senators and Representatives, it is thought the bill will be specially favored and the appropriation asked for granted in its entirety.

A SHIPYARD INDUSTRY.

The Detroit Dry Dock Co., has closed with the Berlin Iron Bridge Co., of East Berlin, Conn., for a new fire proof modern machine shop, which will enable the building of the largest engines required. The building when complete will be one of the finest machine shops on the Great Lakes, and will compare favorably with any in the country. The plant will have modern appliances, such as electric cranes, two of 20 tons capacity, running the whole length of the building, new machinery, electric lights, etc. The main portion of the building will be 200 feet long, 37 feet wide, and 50 feet high in the clear. The two electric cranes running the whole length, with 38 feet of clear space above the floor. Work on the new building will be begun immediately. Two-thirds of it will be erected in eight weeks, and completed in ten. The remainder will be completed as soon thereafter as the old shop can be cleared away.

A NAUTICAL DICTIONARY.

Captain Howard Patterson, of New York, has just published a handsome volume containing five thousand nautical terms. The book is finely illustrated, and is given in five parts as follows;

PART I. Dictionary of General Sea Terms.

PART II. Dictionary of Terms for Wooden and Iron Ship Building.

PART III. Vocabulary of Navigation and Nautical Astronomy.

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A POPULAR U. S. ENGINEER.

Major Charles E. L. B. Davis, who has been for the past six years in charge of the various river and harbor improvements, water level observations, surveys, etc., in Wisconsin, Illinois and Michigan, with headquaters in Milwaukee, has been assigned to a more responsible field of scientific usefulness. He is to look after the defensive works about the national capital, notably Forts Foote and Washington in Maryland, and Forts Wool and Monroe in Virginia. He will also look after the improvements of the Potomac river, and the eastern branch, the Mallaponi, York, Pamunky, Normini, Urbana, and Occuquan rivers and Aqua creek, the harbor of refuge and Lynn Haven Bay in Virginia, the sewerage system at Fort Monroe, and as a member of the board of engineer officers will report on the hrabor lines in the James river from Richmond to City Point, Va., which embraces perhaps the most important territory from a national standpoint assigned to any officer of engineers in the United States service.

Major Davis has won for himself an enviable reputation in scientific circles as an engineer. It is a fact not generally known that the famous jetties at the mouth of the Mississippi, which made the name of Eades famous over the civilized world, were surveyed and planned and elaborately drawn by Major Davis before Capt. Eades was heard of in connection with the scheme. The plans of the two are identical, with the exception that Eades cheapened the work by using less expensive material.

Major Davis was the engineer in charge of the tenth and eleventh lighthouse districts from December 11th 1881, until May 17th 1886. He then came to the lake region May 24th 1886, and was placed in charge of the river and harbor improvements, water level observations and surveys. He made his headquarters in Buffalo the first year, then removed to Detroit, and was then ordered to Milwaukee, where he remained. During his Milwaukee service he has been promoted to the rank of major of engineers, and he is one of the most popular officers in the service.

BRITISH SHIPBUILDING IN 1891.

While shipbuilding is progressing at a gratifying rate on the chain of lakes, it is well to look occasionally at what others are doing. The following synopsis of British built tonnage for the year 1891 may therefore prove interesting to our builders.

During the year there were constructed by British shipbuilders 743 steamers and 209 sailing vessels, aggregating 1,267,472 tons, as against 1,272,203 tons in 1890. Although the difference between the totals is not great, there has been a more than ordinary falling-off in all the more important centres, but the decreases which particular returns disclose are counterbalanced by a large increase in the output of the Royal dockyards. The Clyde output is less by 36,691 tons, the Tyne by 50,284, the Tees by 6,709, the Wear by over 5,000, the Thames by over 6,000, the Mersey by about 7,000, the Tay by something less than 2,000, and the Dee by nearly 3,000. The Forth has increased by nearly 7,000 tons the Humber by about 9000, the two Hartlepools by 7,000, the dockyards by 46,000, Barrow by 7,000, Belfast by 26,000 and Londonderry by nearly 1000. The distinction of having built the largest number of vessels leaves the Clyde for Belfast. Messrs. Harland and Wolff's total of 64,962 tons is the highest in the kingdom. Sir William Gray and Co., Limited, Hartlepool, who were second last year with 64,000 tons, are again second, their total being 59,033. Messrs. Russell and Co., Greenock and Port Glasgow, who were first last year with 70,370 tons, are third with 56,667. Shipbuilding on the Clyde for 1892, is now estimated at 274,000 against 297,000 at the same date of 1891, and 322,000 on January 1st, 1890.

FLOTSAM JETSAM AND LAGAN

An extraordinary general meeting of the German Nautical Association, called to consider the advisability of the universal adoption in the mercantile marine of the new words used on board of vessels of two large German companies in giving steering orders ("right" and "left" instead of "port" and "starboard") has been held at Berlin, and a resolution was passed that the words ought to come into general use.

While entering Muskegon harbor, the steam tug Scotia owned by the Warner & McCracken Co., ran into the pier and damaged her starboard bow to the extent of $900. The casualty appears to have been unavoidable as it was owing to her steering gear carrying away, and before Capt. Lewis could take other measures she crashed into the piers. She is now at the docks of the company undergoing a complete overhauling and repair, and she will receive a new 20 by 22 engine ready for next season's work.

On Thanksgiving day when the steamer Oswegatchie foundered on Lake Huron and her barges drifted ashore, Capt. Edward Ballentine, of the steamer Elfin Mere, was among the lake faring men who displayed great bravery in rescuing the crews of the distressed vessels. He saved a crew of thirteen from the Oswegatchie. At Bay City a few days ago the owners of the Elfin Mere in the presence of a large gathering of vessel owners and masters at a banquet, presented Capt. Ballentine with a gold medal as a token of regard for his bravery.

Capt. McDougall, inventor of the whaleback, is figuring on using the whaleback for war service. He has made a number of photographs showing the proposed war vessels and the plan of operating them. His idea is to use the barges for coast-defense service. They are to be so constructed that by means of water ballast they can be submerged, leaving only a small turret for a lookout forward and the snout, as it is termed, above water. In the bow, which is of great strength, two heavy guns will be stationed on an incline' and they will be so operated that while one is being fired the other may be charged below iu the vessel.

RECORD OF AMERICAN AND FOREIGN SHIPPING.

The volume of 1892, which is the 24th annual issue of this register of shipping, published by the American Shipmasters' Association, is being delivered to its subscribers in its usual handsome form of printing and binding. The *Record* contains reports and particulars of upwards of 18,000 vessels of all classes and nationalities, together with rules for the construction and classification of iron, steel and wooden vessels, rules for the construction and survey of steam machinery and boilers for vessels, provisions for the installation of electric lighting and power apparatus on shipboard, and other valuable information of special importance to underwriters and all firms or individuals interested in shipping. Its rules for the construction of iron and steel vessels are indorsed by the United States Navy Department, and the work is approved and indorsed by the important boards of Marine underwriters in the United States, and is accepted throughout the world as a standard register and classification of shipping. The publication office is at 37 William street, New York.

OBITUARY NOTICES.

Louis P. Trempt, of Sault Ste Marie, a pioneer of the upper peninsula, died suddenly last week, from troubles following an attack of the grip. He had been a resident of Sault Ste Marie since 1846; was treasurer of Chippewa county for 18 years; had been engaged in the mercantile and marine business, held the office of register of deeds at the time of his death, and was well-known throughout the Lake Superior region.

Capt. Cal Jones of Port Huron, died at the Winnebago Wis., insane asylum, on January 1st. For years the captain was connected with the Port Huron & Sarnia Ferry Co. Three years ago he took command of the wrecking steamer Mary Groh. It was when he was on a trip up the lake that he showed signs of insanity. Since that time he has been in several retreats. He leaves a wife and four children.

Captain Richard B. Chapman died at his residence in Ogdensburg last week. He was born at Trenton, Oneida county, in 1817, and for a number of years he was captain of different steamers running between Lewiston and Ogdensburg, among them the Cataract and New York. He took the steamer New York through the rapids to the Gulf of St. Lawrence, and at the time she was the largest vessel that had ever made the trip.

A NEW CENTRIFUGAL PUMP.

WE ILLUSTRATE THIS WEEK A NEW CENtrifugal pump recently placed on the market by the Morris Machine Works, Baldwinsville, N. Y., makers of the well-known Heald & Sisco pumps, which for wrecking, sand pumping, irrigation or drainage purposes stand without an equal.

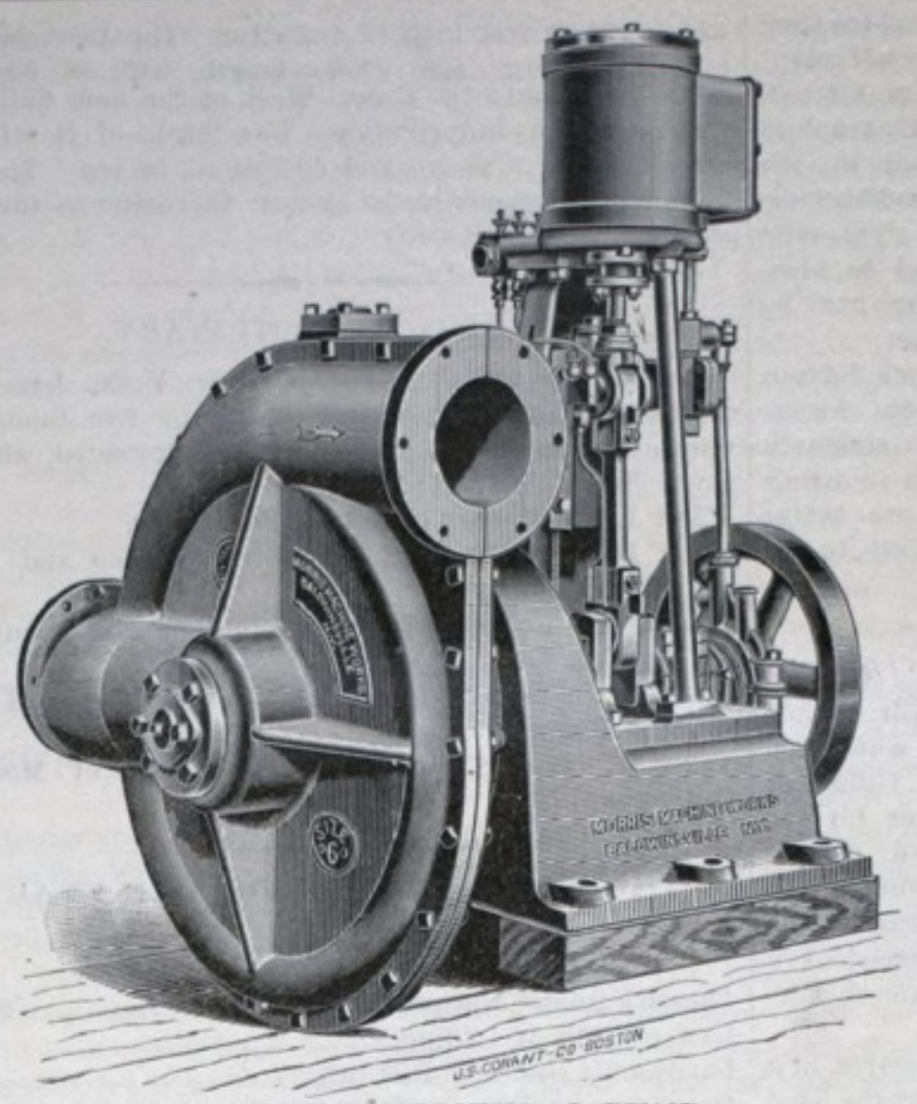
The illustration shows one of their improved circulating pumps designed for use on ship-board in connection with surface condensers or for ballast or bilge purposes.

It can readily be seen that the rig is a very compact one, having been made with special reference to occupying the limited space often reserved for them.

The pump is of the improved double-suction pattern, attached to a frame which will permit swiveling the shell so suction or discharge connections can be taken off at an angle. The engine is of the slide-valve pattern, having a well proportioned frame that will allow free access to any part of it; the bearing surfaces are large; moving parts of steel, accurately balanced, enabling same to be run at a high speed without vibration.

This make of pump has been purchased by the Globe Iron Works, of Cleveland, for circulating purposes in the light-house tenders, Lilac and Columbine and for Mr. H. M. Hanna's new yacht now building by them. Hundreds of these pumps are in use in and about New York harbor.

THE last session of the previous Congress authorized the establisment of a branch hydrographic office at Chicago, but the increase of the appropriation, $2,500, for its maintenance, was not granted. Estimates are again submitted this year for the same amount, and for $5,000 for the publication of a pilot chart for the Great Lakes.



A NEW CENTRIFUGAL PUMP.

AN ENGINEER'S RECORD.

A remarkable instance of long-distance ocean steaming says *The Steamship* has been furnished by the steamer Tekoa, belonging to the New Zealand Shipping Co., and shows to what a high state of efficiency her machinery had been brought. The Tekoa is of 2,646 tons register and 4,050 tons gross, and has a deadweight capacity of 6,250 tons. She is propelled by a single screw, and the remarkable thing about her is that she has made the longest continuous run without stopping on record, and that, too, on an extraordinary small coal consumption. She steamed at full speed from Teneriffe to Auckland, a distance of 12,059 knots, without once easing or stopping the engines, the total distance covered from London being 13,772 knots. The average speed was 10 knots, and the consumption of coal for all purposes 21¼ tons a day, which reveals the astonishing fact that it is now possible to carry a ton of cargo a distance of 13,772 knots with the expenditure of less than 4 cwts. of coal. The Tekoa is a modern high-class passenger and cargo steamer, and her performance on her second voyage will be watched with interest.

THE project of a ship canal to connect Lake Erie and the Ohio River has been revived in the present Congress. In previous Congresses bills have been introduced to start the scheme, but none of them ever got beyond the pigeon hole of a committee room. Senator Quay has introduced a bill for a canal from Erie to a point on the Ohio River at or near Pittsburg.

MARINE AND INLAND INSURANCE.

Atlantic Mutual Insurance Company,
(ORGANIZED 1842.)
Office, 51 Wall Street, NEW YORK.

INSURES AGAINST MARINE AND INLAND TRANSPORTATION RISKS AND WILL ISSUE POLICIES MAKING LOSS PAYABLE IN ENGLAND.

Assets over $10,000,000.00, for the Security of its Policies.

The profits of the Company revert to the assured, and are divided annually upon the premiums terminated during the year; thereby reducing the cost of insurance. For such dividends, certificates are issued bearing interest until ordered to be redeemed, in accordance with the charter.

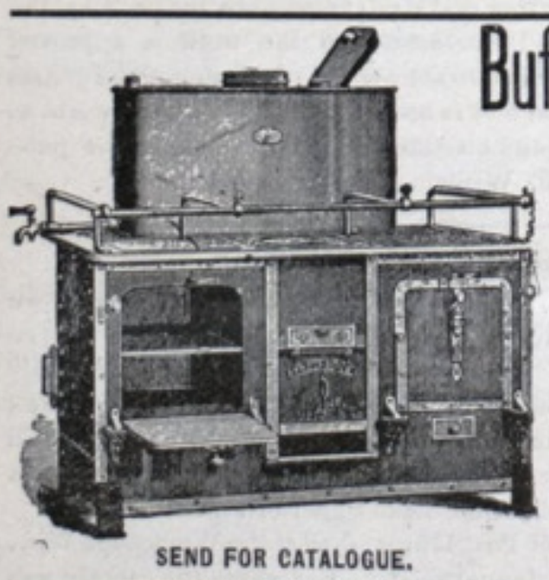
J. D. JONES, Prest. W. H. H. MOORE, Vice-Prest. A. A. RAVEN, 2nd Vice-Prest. J. H. CHAPMAN, Secy.

Insurance Company of North America.
INCORPORATED 1794.

CAPITAL, PAID UP IN CASH, - $3,000,000.00
ASSETS. - - - - - $8,951,518.83

CHARLES PLATT, President. WILLIAM A. PLATT, Vice-President.
EUGENE L. ELLISON, 2nd Vice-President. GREVILLE E. FRYER, Sec'y & Treas.
JOHN H. ATWOOD, Assistant Secretary.

LAKE MARINE DEPARTMENT.
GEORGE L. McCURDY, MANAGER. CHICAGO, ILLS



Buffalo Wrought Steel Ranges
Steamboat and Vessel Ranges and Broilers, with patent Rotary Grate.
SOMETHING NEW AND GOOD.
We also carry the STAMFORD TUG AND YACHT GALLEY STOVES.
RUSSELL & WATSON
Successors to FELTHOUSEN & RUSSELL.
139-141 Main St., BUFFALO, N. Y.
SEND FOR CATALOGUE.

H. B. & G. B. BURGER,
SHIP-BUILDERS & CONTRACTORS.
MANITOWOC DRY DOCK.
Dry Dock will admit Vessels of 1100 tons drawing 12 feet. Have also a set of Boxes in connection with the Shipyard capable of lifting Vessels of 350 tons. A large stock of SPARS constantly on hand. LARGE SPAR DERRICK.
Vessels Docked and Repaired on Reasonable Terms.
MANITOWOC, WIS.

INLAND MARINE INSURANCE.

UNION MARINE INSURANCE CO.,
(LIMITED.)
OF LIVERPOOL, ENGLAND.

TRANSATLANTIC MARINE INSURANCE CO., - - OF BERLIN
GENERAL INSURANCE CO., - - - - - OF DRESDEN
SAXONY INSURANCE CO., - - - - - - OF SAXONY

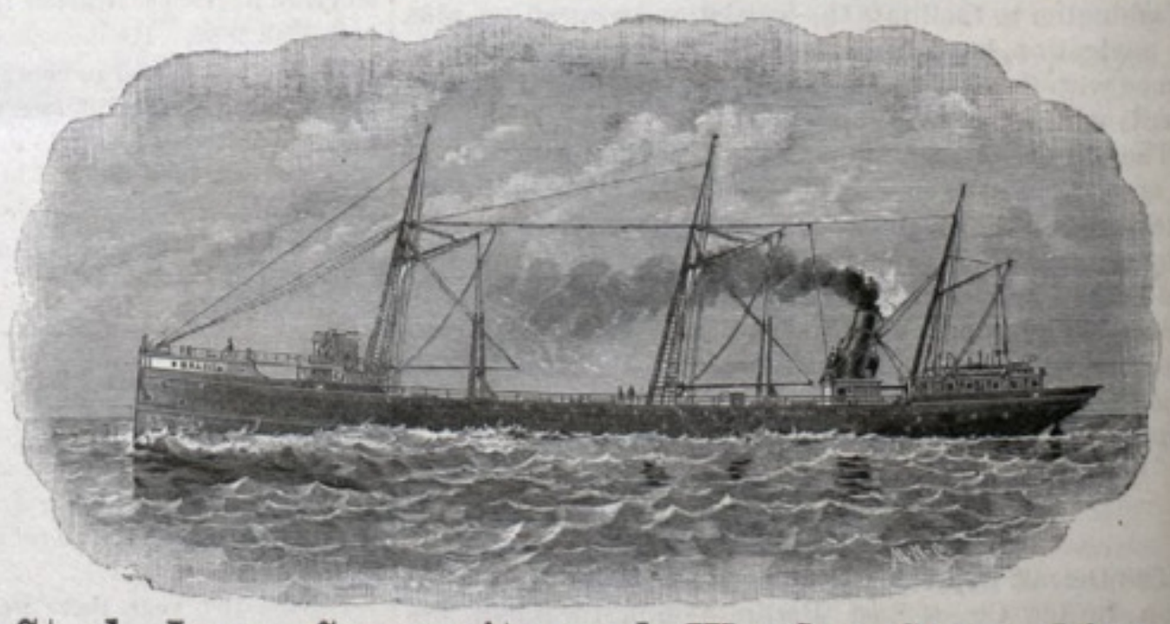
AGGREGATE CAPITAL OVER $6,500,000.

The above Companies will do a General Hull and Cargo Business on the Great Lakes.

CHICAGO OFFICE: 6 SHERMAN STREET.
P. H. FLEMING, GENERAL MANAGER.

SAMUEL F. HODGE & COMPANY,
MANUFACTURERS OF
MARINE
Stationary and Portable Engines,
MINING MACHINERY AND
PROPELLER WHEELS,
Riverside Iron Works, 314 to 326 Atwater Street,
DETROIT, MICH.

THE UNION DRY DOCK CO.



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BUILT, DOCKED AND REPAIRED.
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COMMODORE PERRY. OWEGO. S. C. REYNOLDS. VIKING. S. C. SCHENCK. "PIER" FRANK W.
BUFFALO, N. Y.